

Claims

- 5 1. Process for the detection, cloning and/or sequencing of polypeptides or parts thereof, which drive the subcellular localization of a protein containing such polypeptide or part thereof,
characterized in that the process comprises the following steps:
- (a) constructing an expression library of random nucleic acids ligated to a reporter gene and contained in a vector molecule,
 - 10 (b) transfecting a plurality of host cells with the library,
 - (c) screening for the subcellular localization of the expression product of the nucleic acid in the host cells via detection of a signal produced by the reporter gene,
 - 15 (d) cloning such cells where the reporter gene signal is detected in a certain subcellular localization, and
 - (e) cloning and optionally sequencing the nucleic acid insert which encodes the polypeptide or part thereof.
- 20 2. Process according to claim 1,
characterized in that a cDNA or cDNA fragments are used as random nucleic acids.
3. Process according to claim 1 or 2,
characterized in that a eukaryotic or a yeast library is used.
- 25 4. Process according to anyone of claims 1 to 3,
characterized in that a homologous system of library and cells for the transfection is used.
- 30 5. Process according to anyone of claims 1 to 3,
characterized in that a heterologous system of library and cells for the transfection is used.

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characterized in that the vector further comprises a reporter gene positioned in such a way that a fusion protein of desired protein and polypeptide or part thereof and reporter gene product is encoded.

5 19. Vector according to claim 18,
characterized in that the reporter gene product is visually detectable.

10 20. Vector according to any one of claims 16 to 19,
characterized in that the vector further contains sequences encoding proteolytic cleavage sites between one or more of the constituents of the fusion protein.

15 21. Cell line,
characterized in that it is transfected with a vector according to anyone of claims 16 to 20, encoding a fusion protein of at least a polypeptide or part thereof driving the localisation to a given subcellular localisation and a desired protein.

20 22. Kit for the expression of a desired protein in a desired localisation of a host cell,
characterized in that it contains a vector according to anyone of claims 16 to 20 or a cell line according to claim 21 optionally together with other components and/or buffers for the protein expression.

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23. Collection of cell lines according to claim 21.

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